



CAP Implementation in México

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Institute of Research and Studies on Alerts and Risks A.C

September 2015

Thanks to all



Since 4 years ago.....
a dream come true



GOBIERNO DE LA
CIUDAD DE MÉXICO



Global Disaster
Preparedness
Center

What we are talking about?

- Risk Disasters



What is CAP purpose?



We all have a
critical acting role
in CAP

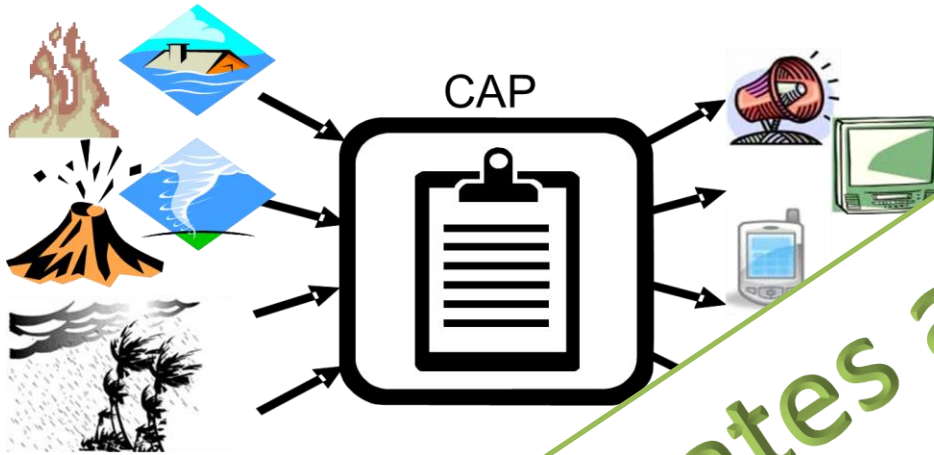


PERSPECTIVE



PROSPECTIVE

What are CAP guidelines?



CAP creates a bridge
between these
components

Do people know

Are m
sufficie

Are foreca
local capabi

Are people directly monitored?
Are people designed and
and technically?

Are people prepared for disasters?



Background: Earthquakes CAP and EAS



Alert 26 Million
people

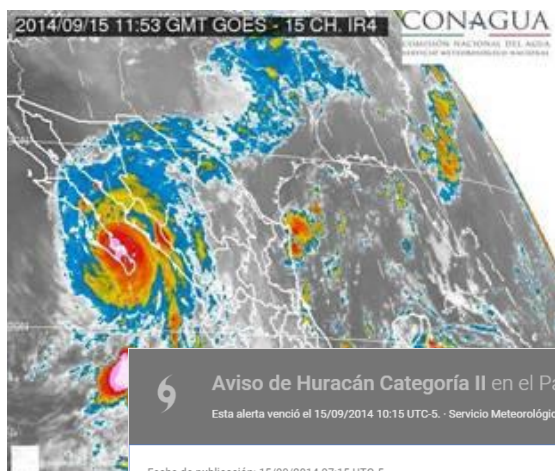
CAP just to Notify, Not
for Warning



centro

on y registro sísmico, a. c.

Background: Hidrometeorological



6

Aviso de Huracán Categoría II en el Pacífico

Esta alerta venció el 15/09/2014 10:15 UTC-5. · Servicio Meteorológico Nacional

Fecha de publicación: 15/09/2014 07:15 UTC-5

El huracán "Odile" continúa como un huracán categoría III en la escala de Saffir-Simpson, se desplaza hacia el nor-noroeste. Su circulación provocará potencial para lluvias torrenciales en Baja California Sur, intensas en Sinaloa; muy fuertes en Baja California, Sonora, Nayarit, Jalisco, Durango y Colima, y fuertes en Chihuahua y Michoacán.

Los datos contenidos en el presente documento, forman parte de un producto piloto en fase experimental para avisar únicamente sobre ciclones tropicales. Dichos datos se determinaron con base en la información de modelos numéricos de fenómenos hidrometeorológicos con los que cuenta la Comisión Nacional del Agua, por lo que al ser los mismos variables, no es posible determinar con exactitud su ocurrencia y magnitud. Las medidas para la prevención y mitigación de sus efectos son emitidas por las autoridades de protección civil.

Acciones recomendadas:

A la población en general de los estados mencionados y a la navegación marítima en las inmediaciones del sistema, mantener precauciones y atender las recomendaciones emitidas por las autoridades del Sistema Nacional de Protección Civil.

In 2014, Presidency of the Mexican Republic and CONAGUA-SMN worked together in CAP implementation for tropical cyclone alerts (July)

It collaborates with Google Crisis Map, a new way to inform the public in a timely manner on these weather event

One of many success example on how the CAP help to alert the public is with the Hurricane Odile that hit Baja California México in September 2014

CONAGUA-SMN began the implementation of the CAP in 2016 for the cold fronts alerts (May). CONAGUA-SMN is currently working in the development of more CAP's for weather alerts

CONAGUA
COMISIÓN NACIONAL DEL AGUA

Background: Volcano

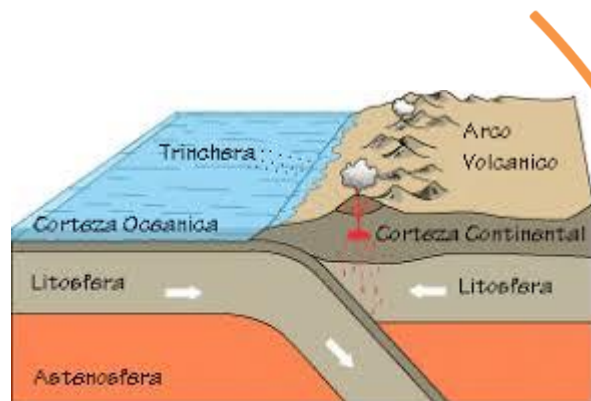


Since 2014 in coordination with technological Presidency office of the Mexican Republic worked together in CAP implementation for Volcano alerts



CENAPRED
MÉXICO

Background: Seismological Service



Oceanic-continental convergence



Since 2016 in coordination with CENAPRED worked together in CAP implementation to notify earthquakes



Background: tropical cyclones



Since 2016 in coordination with CENAPRED worked together in CAP implementation for tropical cyclones notifications and alerts



SEMAR
SECRETARÍA DE MARINA

Background: Space Risk



Since 2018 in coordination with CENAPRED worked together in CAP implementation for space notifications and alerts





GOBIERNO DE LA
CIUDAD DE MÉXICO

SECRETARÍA DE GESTIÓN INTEGRAL
DE RIESGOS Y PROTECCIÓN CIVIL

Emergency Multi hazard early Warning System with CAP for Mexico City



Background



INSTITUTO FEDERAL DE
TELECOMUNICACIONES

June 2014. Urge the House of Representatives to IFT to establish an APP to alert seismic by cell phones.

July 2014. Meetings with the National Seismological Service (SSN), the Center for Instrumentation and Seismic Record, AC (CIRES).

September 2014. Request of the National Water Commission (CONAGUA) to assist and advise the pilot sent emergency announcements project hydrometeorological phenomena via cell phone.

October 2014.- Installation of working groups for the regulation and development of the Mexican Seismic Alert System (SASMEX) in mobile telephony.

October 2014 to April 2015.- Installation and monitoring of desks with mobile phone dealers for the draft notices by hydrometeorological phenomena.

November 2014.- Contact with sub-ministry of Telecommunications (Subtel) of Chile to share technical information and advice in implementing the warning system for emergencies.

Background



January 2015.- Analysis of Cell Broadcast technology for the transmission of bulk messaging in emergency situations.

April 2015.- Inclusion Project in the National Digital Strategy President of the Republic.

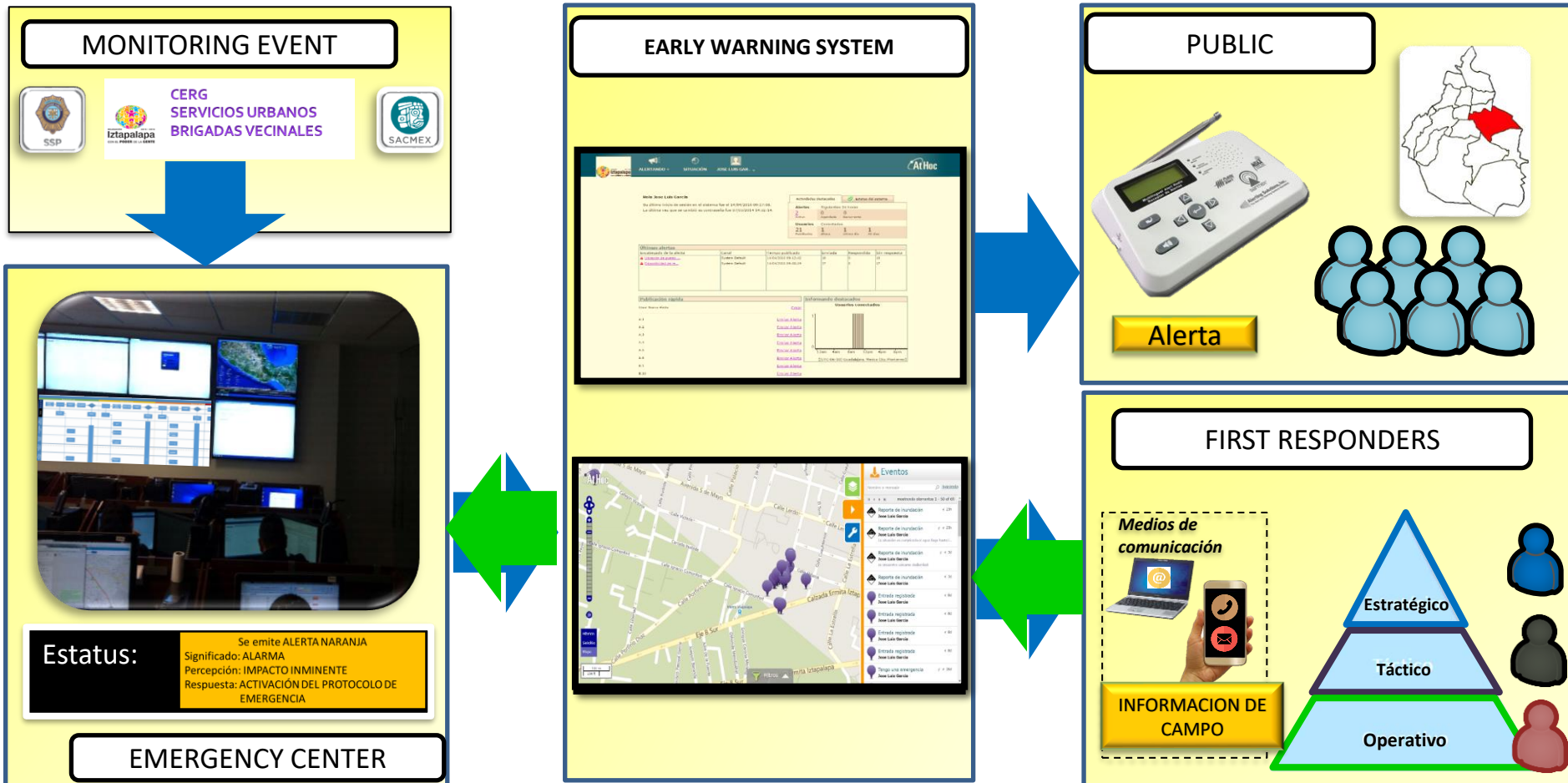
April 2015.- Initiative to reform the Federal Telecommunications Act and Broadcasting (LFTyR) to give the power to regulate IFT messages in emergency situations. Favorable vote in Parliament (Senate vote needed).

May 2015.- Analysis of the use of SMS messaging for the transmission of messages in emergency situations.

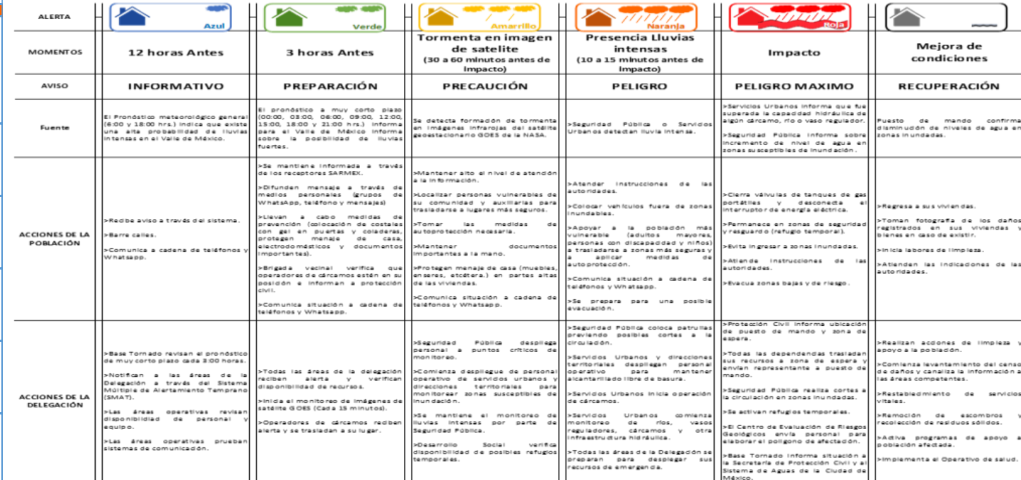
May 2015.- Presentation of the draft in the regional workshop on emergency communications, CCP II of the Inter-American Telecommunications Commission (CITEL) Cusco, Peru.

June 2015.- Inclusion of the issue on the bilateral agenda June 8 with the Federal Communication Commission (FCC) of the US

Case 1: CAP on Floods



USE OF EAS/SAME-CAP PRTOTOCOLS (EMERGENCY ALERT SYSTEM/SPECIFIC ÁREA MESSAGE ENCODING-COMMON ALERTING PROTOCOL)





Economic Evaluation of Disaster on Floods: Comparing No Warning (Sept 2013) and Warning (June and Sept 2017)

Concepto	sep-13	jun-16	sep-16*
Tiempo de Alertamiento Anticipado	0	25	78
Precipitación acumulada en 2 horas (mm)	86	97	80
Número de colonias afectadas	22	18	12
Tirante máximo alcanzado en zonas inundadas (cm)	170	130	150
Escuelas afectadas	1	0	2
Tiempo de recuperación aproximado (días)	10	3	1.5
Impacto económico (Millones de pesos)	Más de 30 millones de pesos	18 millones de pesos	6.8 millones de pesos
Viviendas afectadas	Más de 3,700	1,776	815
Población afectada	16,650	7,992	3,668

* Nota: Información preliminar



FROM COMMITMENT TO ACTION
22-26 MAY, 2017 | CANCUN, MEXICO
2017 GLOBAL PLATFORM
FOR DISASTER RISK REDUCTION

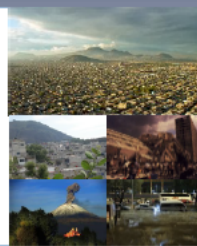
IMPROVE, INTEGRATED EARTHQUAKE AND MULTIHAZARD EARLY WARNING SYSTEMS IN IZTAPALAPA COUNTY

Author: **Mr. Mario A. Ruiz Velázquez**
As Regional Director, Instituto de Estudios sobre Alertas y Riesgos



FACTS

Since 1981 is working Monitoring and Warning System to public directly, using technology designed by CREDI 88 telecentres, 5 Transmitters.
Protocol: Common Alerting Protocol (CAP) and Emergency Alert System/Specific Area Message Encoding (EAS/SAME).
EQW is received by 25 million people.
Iztapalapa County has 1.8 million inhabitants.
Mainly Risk: Floods, earthquakes, volcano, land slides, floods, industry.
It doesn't have a warning system.
The emergency response is disorganized and slow.
In each event the procedures for responding the emergency were reinvented.
It is necessary to move from the crisis in the response to crisis management.
Exist a wide gap to communicate to public in risk from authorities.



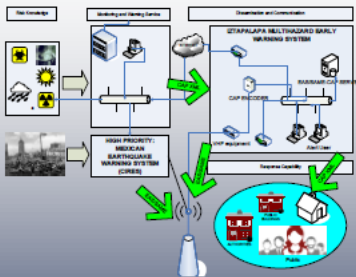
INTEGRATION OF EAS/SAME-CAP PROTOCOLS (EMERGENCY ALERT SYSTEM/ SPECIFIC AREA MESSAGE ENCODING-COMMON ALERTING) PROTOCOL

Iztapalapa Early Warning System integrates earthquake warning system technology with EAS/SAME-CAP protocols. This protocol is used by NOAA, FEMA, JMWTC and UN (ITU-WMO) in more than 35 countries.

NOAA Weather Radio All Hazards (NWR) Specific Area Message Encoding (SAME) supports NOAA Weather Service's mission "to protect life and property through improved forecast accuracy and area emergency alerts". This is accomplished through effective dissemination of warning, emergency alerts, and weather information to the public.

NWR SAME provides in a digital format specific, timely information on the nature and location of a threat to the safety of those most immediately at risk from severe weather or other hazards. Its greatest value is to significantly improve the automatic selection and distribution of messages about events that threaten people and/or property.

The Common Alerting Protocol (CAP) is a digital format for exchanging emergency alerts that allows a consistent alert message to be disseminated simultaneously over many different communications systems. UN and FEMA worked with the Organization for the Advancement of Structural Information Standards (OASIS) to develop a standardized international technical data profile that defines a specific way of using the standard; in US for the Integrated Public Alert and Warning System (IPAWS).



INSTITUTE OF RESEARCH AND STUDIES ON WARNINGS AND RISKS (IIDEAR)

iidear

Instituto de Investigaciones y de Estudios sobre
Alertas y Riesgos

IIDEAR is a non-profit civil association dedicated to the research and promotion of early warning systems and disaster risk management. Its main objective is to investigate, promote and contribute with authorities, artists and the society in actions related to predicting, reducing and controlling the risk of disasters.



THE PROGRAMME COMMITTEE OF THE

MULTI-HAZARD EARLY WARNING CONFERENCE

RECOGNIZES THE EXCELLENT POSTER PRESENTED BY

Mario Alvaro Ruiz Velázquez

PETTERI TAALAS
WMO

ROBERT GLASSER
UNISDR

QUYNH HAN
UNESCO

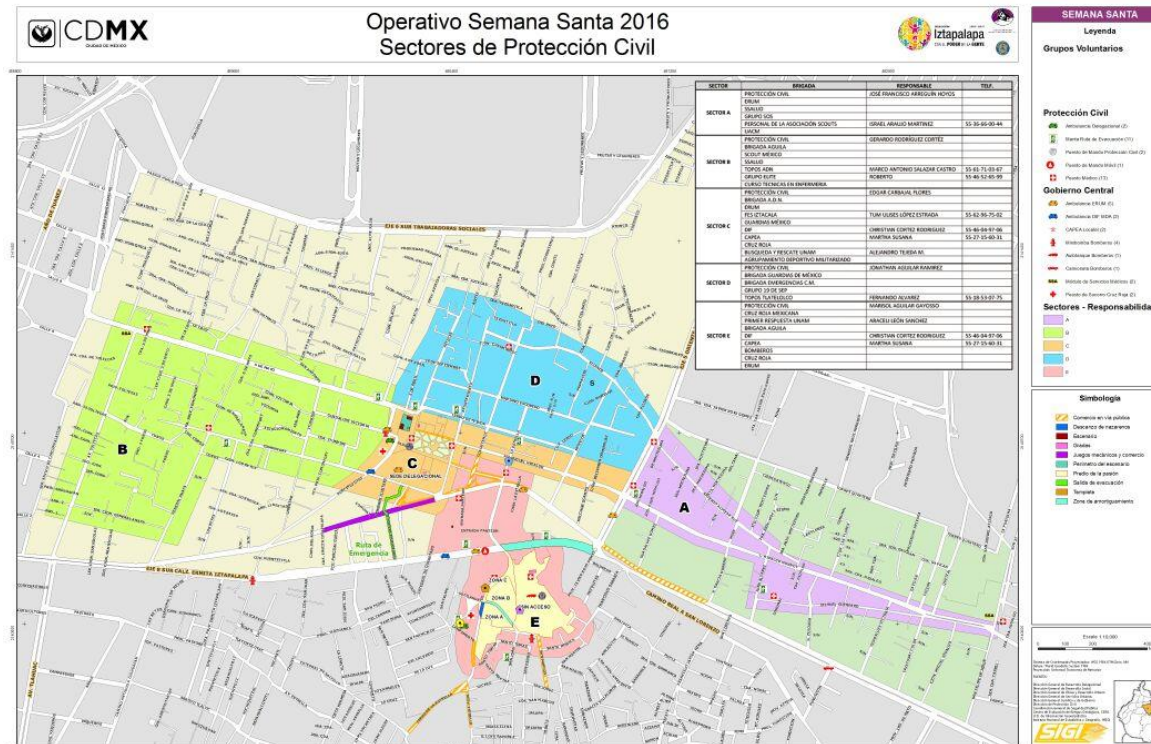
CARLOS MIGUEL VALDÉS GONZALES
MEXICO

LAURA TUCK
WORLD BANK

CANCUN, MEXICO, 22 MAY 2017



Case 2: Social Event



- ❖ 174 representation of the Passion of Christ in Iztapalapa held from April 14 to 21, 2017
- ❖ Congregation of 2 Million people in 3 days
- ❖ 20 voluntary organizations of Mexico City including the Ambulances and the Mexican Red Cross.
- ❖ These 20 organizations consisted of 840 people.

- ❖ *The area where was subdivided into 5 zones; each zone was subdivided into five at a time: 25 subareas was assigned to a voluntary group and 5 more to Civil Protection Authorities.*
- ❖ *Stronger in technical and operational capacity: Mexican Red Cross (crucifixion stage); and the Medical Rescue and Emergency Squadron (main square's county).*
- ❖ *An Emergency Operations Center (COE) was installed, using Command Incident System for operational issues, and CAP to communicate events.*
- ❖ *In the COE was installed the Unified Command, where were the 20 commanders of the organizations that participated, as well as the Director of Civil Protection County who commanded the whole operation.*
- ❖ *In order to use the Incident Command System, approximately 1,300 people were trained.*

- ❖ *60 people use Incident Command System with CAP.*
- ❖ *No death was reported; 90 medical care (heart attack). This event required the coordination of three zones with the System using CAP and the Emergency Operations Center, to be able to carry it to an ambulance outside the areas and take him to a hospital saving his life.*
- ❖ *With the support of the Mexico's City Civil Protection Secretary, 84 occasions were carried out by means of a drone in order to review the gaps of people and avoid overcrowding.*
- ❖ *On five occasions, incidents derived from religious fervor were avoided, maybe by the effects of alcohol or some psychotropic substance, notifying authorities using CAP.*



IAEM
International
Association of
Emergency Managers



OASIS



Case 3: CAP on earthquake M 7.1 reconstruction, september 2017

Reconstruction in Iztapalapa County

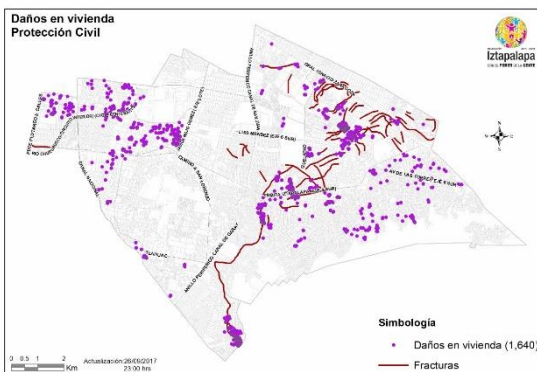
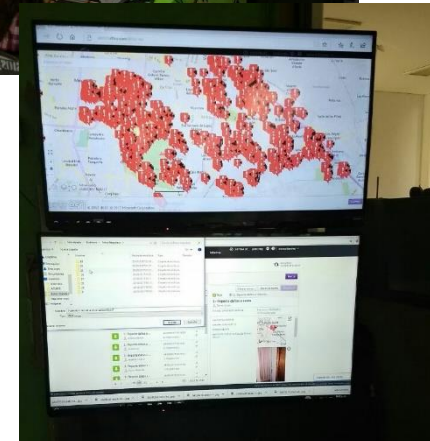


Almost 600 personas

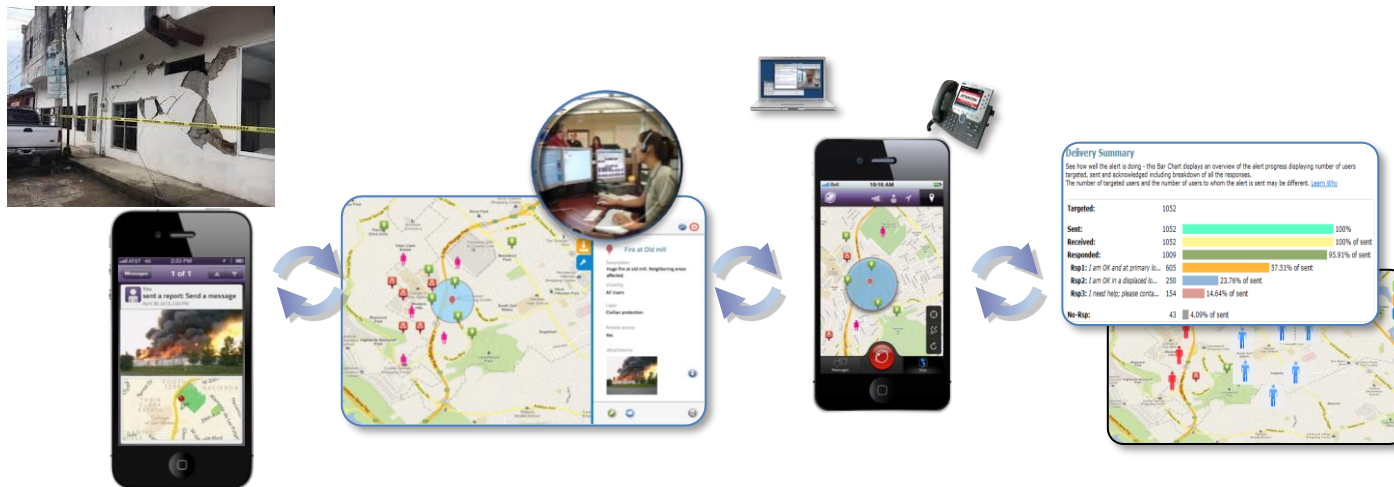


Disaster Operational Center of Iztapalapa County

Support plans and activities for disasters

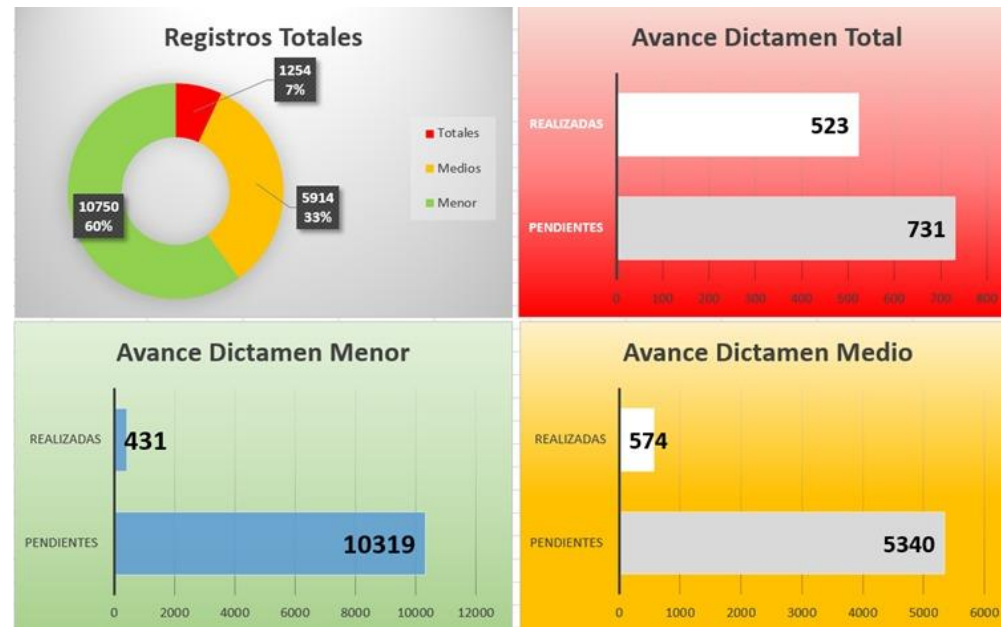


Identification and evaluation of homes damaged



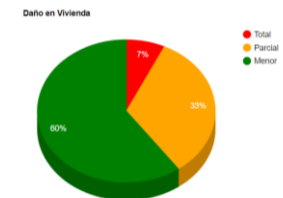
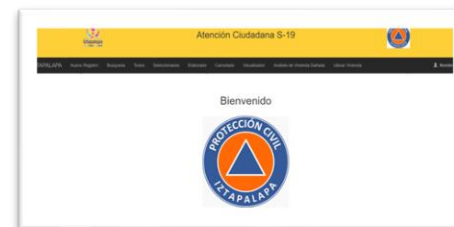
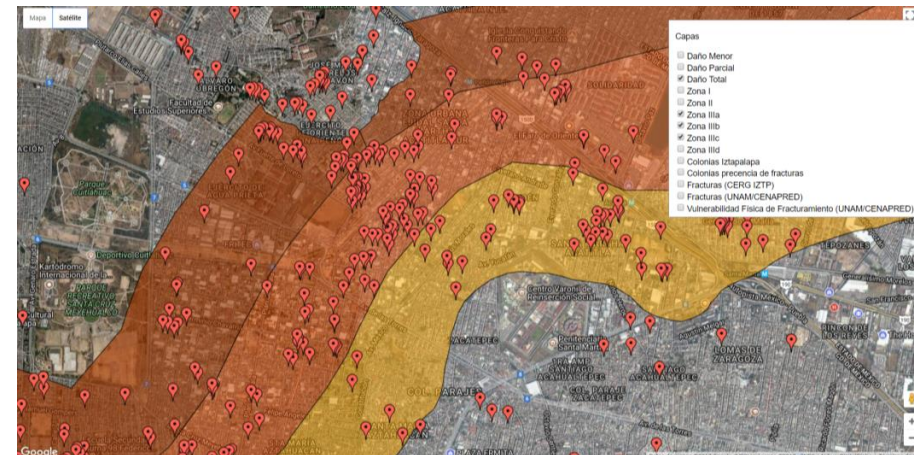
County results

- ❖ 25 thousand reports.
- ❖ More than 19 thousand affected houses.
- ❖ Three day of activities.
- ❖ Damaged evaluation in three weeks.
- ❖ Mostly houses were affected by non solid ground.
- ❖ This information was included in GIS systems
- ❖ This information was base to elaborate Official Damaged Documents.



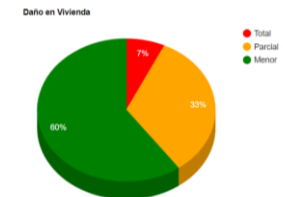
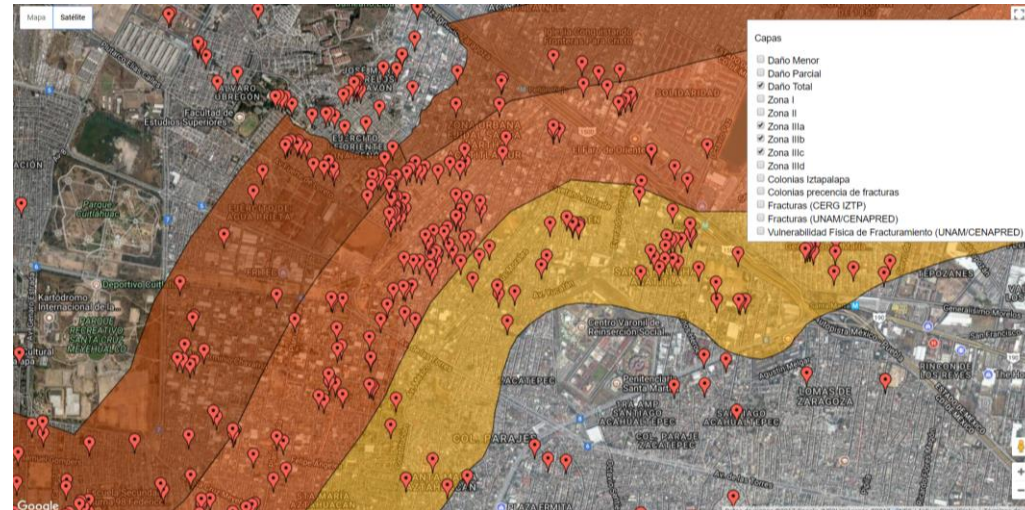
Technologies

- ❖ 700 App to make reports with cellphones using CAP to collect information.
- ❖ Training to 700 hundred people to collect data.
- ❖ 3 coordinators in Command Control Center
- ❖ Creation of database information with imagens with geo localization
- ❖ Creation of official documents



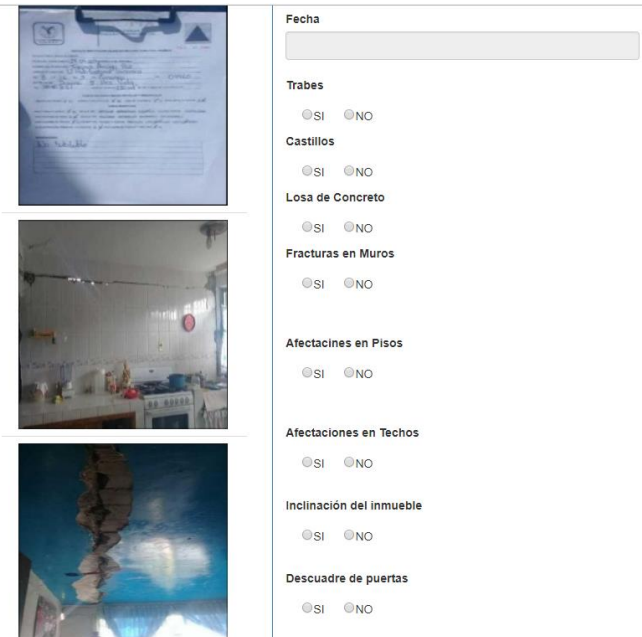
Technologies

- ❖ *GIS: Layer of damaged houses and layers of natural seismic danger.*
- ❖ *Damage evaluation (pictures)*
- ❖ *Making decision: Reconstruction, Relocation, Make stronger or repair buildings*
- ❖ *Create official documents to ask for federal and state resources for families.*



Conclusions

- ❖ *Identify the dimensions of the damage caused by the earthquake.*
- ❖ *Centralize data, analyze them in an agile manner and provide accurate and useful information for decision making.*
- ❖ *To have a visualizer of easy access, update and management that allows to define the zones of higher priority.*
- ❖ *Maintain governance in the delegation by making the information analysis process transparent and guiding them so they can access federal and local resources. Issuing opinions in an agile manner. Contain social mobilizations.*



Fecha

Trabes

☐ SI ☐ NO

Castillos

☐ SI ☐ NO

Losa de Concreto

☐ SI ☐ NO

Fracturas en Muros

☐ SI ☐ NO

Afectaciones en Pisos

☐ SI ☐ NO

Afectaciones en Techos

☐ SI ☐ NO

Inclinación del inmueble

☐ SI ☐ NO

Descuadre de puertas

☐ SI ☐ NO

Next Steps



Legal Framework

Chambers of deputies and senators, as well as civil protection authorities accepts IFT's power to regulate the messages in emergency situations

Regulate warning equipment for emergency

Develop CAP México Profile (CAP-Mx)

Next Steps



Analysis and CAP Mexico Strategical components development

Design, monitor and regulate the mechanism and define the technological parameters required to transmit massively through dealers telecommunications, broadcasting and application service providers, smart alert messages in emergency situations.

Regulate mode in which dealers telecommunications, broadcasting and application service providers shall or shall not transmit early warnings in emergency situations.

Strengthening the physical infrastructure of telecommunications to prioritize communications before, during and after an emergency event.

Methodology to disseminate Warnings and Notifications using CAP

Next Steps



Coding the
Common
Alerting
Protocol
(CAP) to
approve its
use by
different
agencies
issuing
warnings

Coordinate Federal using CAP Alert
Messages Between Authorities

Coordinate State and County Messages
using CAP Between Authorities

Coordinate Public Hazard Warning
using all CAP

Resume



- ❖ *Mexico's EQW is using CAP to Update Earthquakes; for Alert is using EAS/SAME VHF technology (fast response)*
- ❖ *CAP-EAS/SAME protocols may to be used for last mile to warn communities that doesn't have access to other telecommunications medias*
- ❖ *Mexico's Federal Telecommunications Institute is leading and working to create legal framework to use CAP in Mexico*
- ❖ *Mexico's Agencies are working together to implement CAP, not only at Federal Level, are included State and County, but mainly Public*



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